

IST Status and Plan

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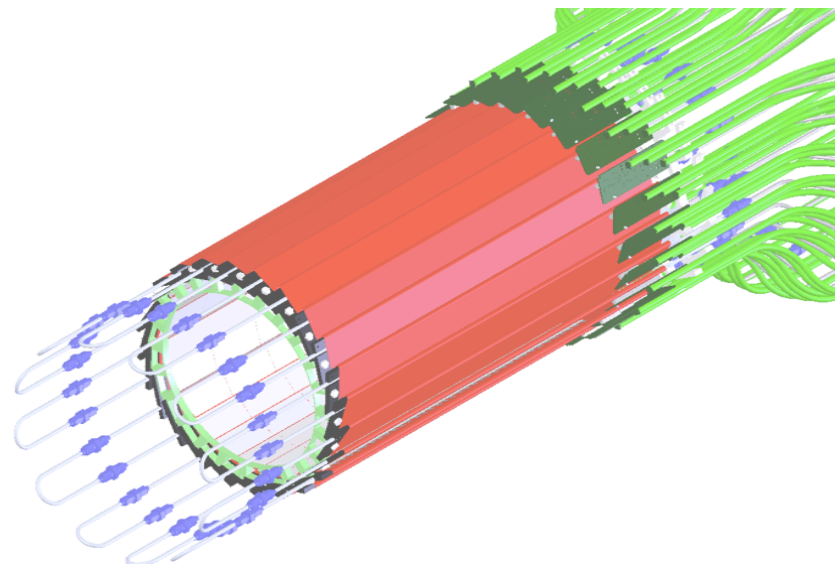
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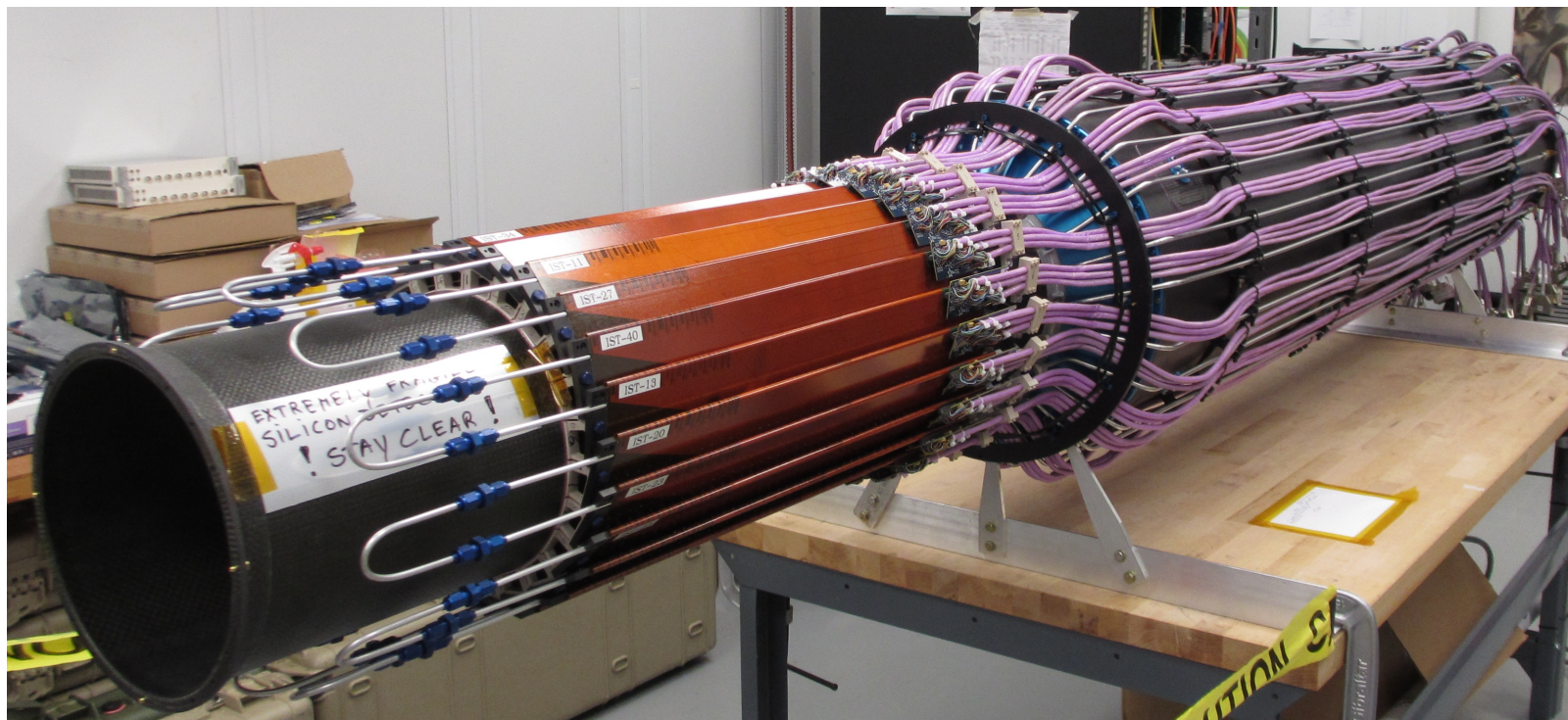
Bob Soja, Don Pinelli



- **Introduction**
- **Detector status and plan**
- **Readout system status and plan**
- **Cooling system status and plan**
- **Software status and plan**
- **System testing, commissioning and transition to operations**
- **Summary**

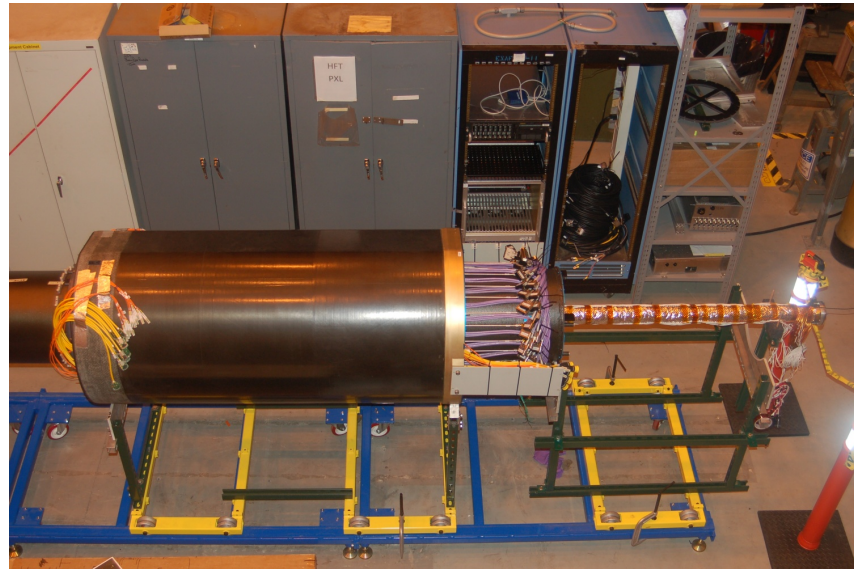
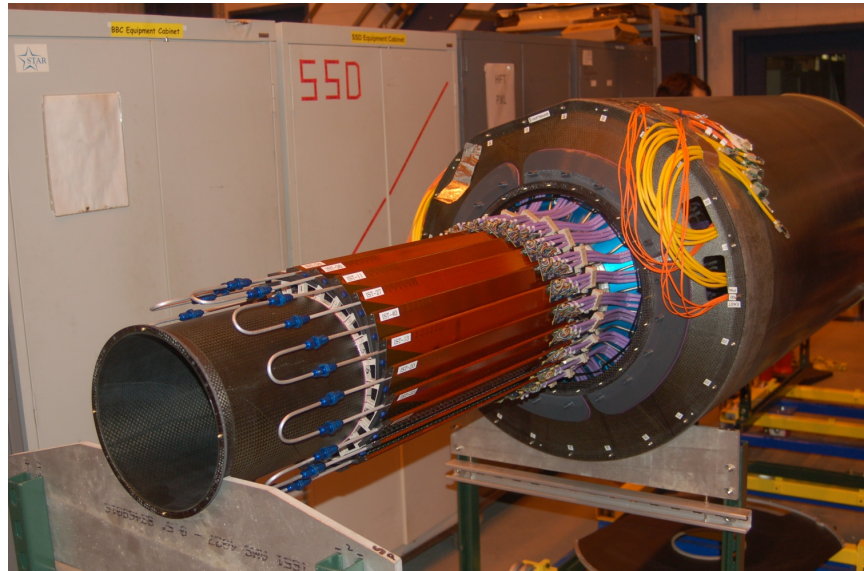
Introduction

- 24 staves + 3 spares
- 3 Wiener MPOD crates + 9 ISEG bias supplies
- 6 ARC-II boards + 36 ARM boards + 36 BOC boards + 72 external cables + 72 PP boards + 24 T-boards + 72 internal cables
- Cooling system
- 2 DAQ PCs with 6 fiber interfaces



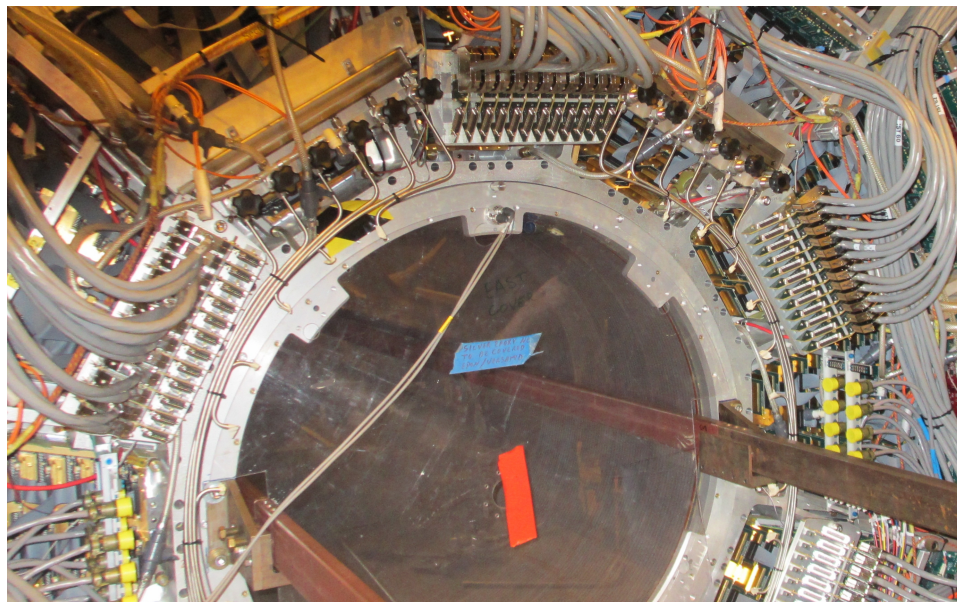
Detector status and plan

- IST barrel fully assembled, installed on IDS/MSC and tested on July 31st
 - tested 4 staves at a time with full readout chain
 - more than 99% of the 110,592 channels fully functional, 1 to 3 chips malfunctioning
- Cooling lines were Helium leak tested
- Integrated with IDS in second week of August
- Roll-in STAR in 1st week of October



Readout system status and plan

- 72 patch panels installed and 72 signal cables routed to readout rack
- All 3 readout crates installed in rack, cable hookup finished
- Testing of all 72 readout chains is ongoing
- Before November, 2 ARC-II boards and 12 ARM modules are available to test 1/3 of the barrel at a time (8 staves)
- The rest (4 ARC-IIs + 24 ARMs) will be available in November. The ARC-IIs are in production and ARMs too.



Cooling system status and plan

- All 4 cooling manifolds and cooling rack installed in STAR and connected
- Cooling lines will be connected on October 16.
- Cooling test will be started on October 16
- All slow control software exists, but need to be integrated into STAR slow control
- The rack slow controls have already been connected to Starp network, and are functioning.



Online software status:

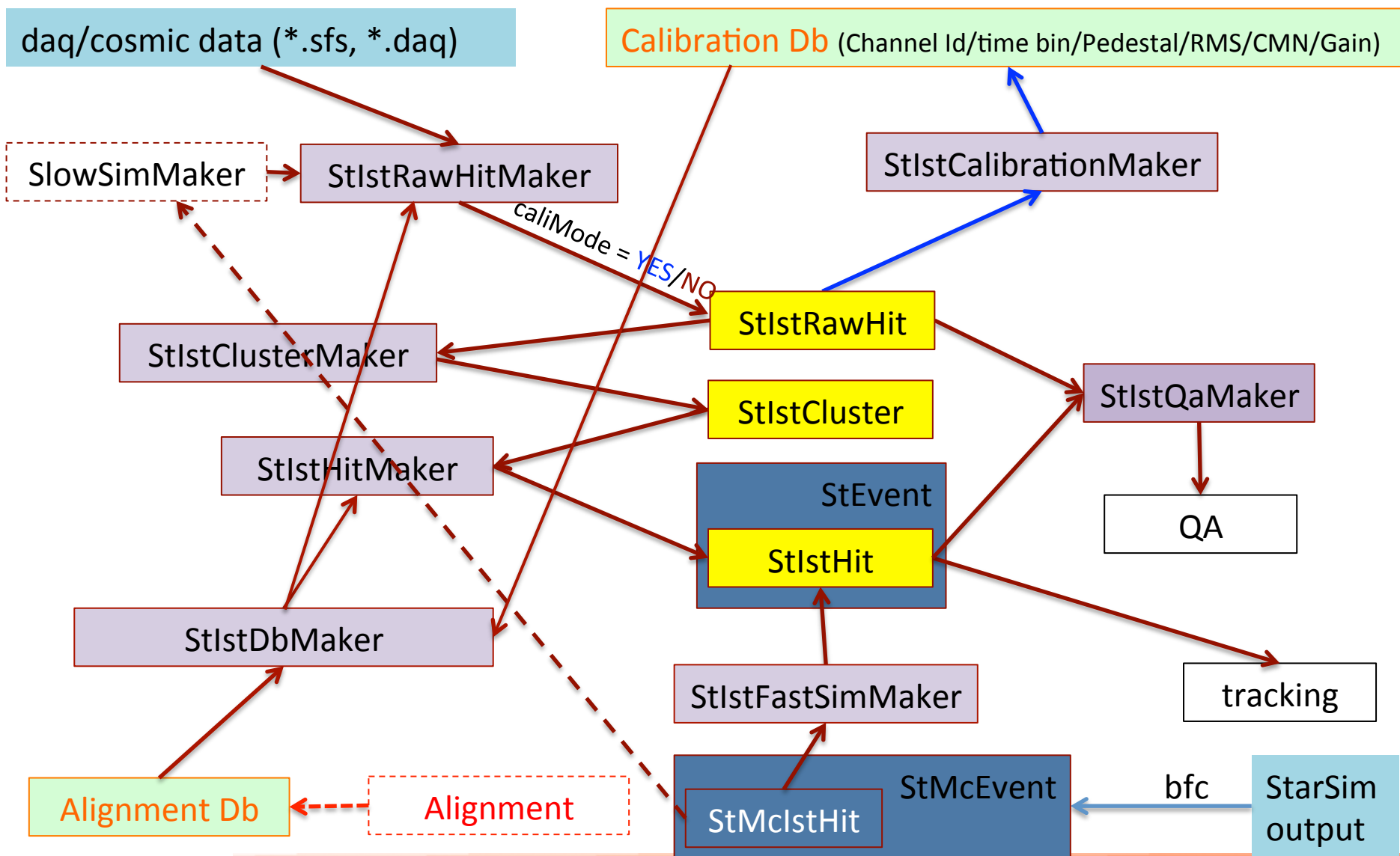
- The slow control software is available, but need to be modified to shift operations (ongoing).
- Online monitoring software needs to develop, and will be started after deciding zero suppression to be executed in FPGA level or in DAQ-PC level.

IST geometry/calibration DBs:

- Two databases created: <http://online.star.bnl.gov/dbExplorer/>
 - **Geometry_ist**: istSurvey, istOnPst, istLadderOnIst, istSensorOnLadder, idsOnTpc, pstOnIds
 - **Calibration_ist**: istGain, istPedNoise
- Getting the IST survey data into geometry DBs will be started in 4th week of October
- Calibration DBs will be populated/tested in the coming cosmic runs

Software status and plan – offline (ready for review)

The offline chain will be tested in November for IST full barrel readout



System testing, commissioning and transition to operations

✧ System testing with cosmic

☑ Plans and task list for the 1st cosmic run (around mid-November):

- | | |
|------------------------------|-----------------------------|
| • Test of DAQ | Ben, Gerard, Gerrit, Yaping |
| • Test of slow control | Chanaka, Yadav |
| • Test of online monitoring | Gerrit, Yaping, Zillay |
| • Calibration DBs population | Gerrit, Yaping |
| • Test of offline software | Yaping |
| • Test of offline QA | Yaping |

☑ Plans and task list for the 2nd cosmic run (around December):

- | | |
|---|----------------------------------|
| • Checkout of slow control, online/offline software | Gerrit, Yaping, Yadav |
| • Tracking? | HFT software group |
| • IST offline alignment? | Yaping, UIC new postdoc/student? |
| • IST data analysis | Yaping, UIC new postdoc/student? |

✧ Commissioning with beam

☑ Plans and task list for the first 3 weeks commissioning in run-14 (with 14.6 GeV Au+Au):

- | | |
|--|------------------------|
| • Online and offline software verification | Gerrit, Yaping, Zhenyu |
|--|------------------------|

☑ Plans and task list for the commissioning in run-14 (with high/low lumi. 200 GeV Au+Au):

- | | |
|--|------------------------|
| • Performance verification in this environment | Gerrit, Yaping, Zhenyu |
|--|------------------------|

✧ Transition to operations ?

Summary

- IST fully assembled and tested, already roll-in STAR.
- Cooling system installed, and cooling test with barrel will start on 3rd week of October.
- Readout system tests with 1/3 barrel at a time until November, and tests with full barrel in November.
- Offline software is mostly completed and ready for review in 3rd week of October.
- Online software (slow control and online monitoring) is in progress.

IST will be available for system tests in the coming cosmic runs.